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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,811	02/12/2002	Paul M. Lefebvre	GI-35	8854
23524	7590	04/18/2005	EXAMINER	
FOLEY & LARDNER 150 EAST GILMAN STREET P.O. BOX 1497 MADISON, WI 53701-1497			GORDON, BRIAN R	
			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/075,811

Applicant(s)

LEFEBVRE, PAUL M.

Examiner

Brian R. Gordon

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1-31-05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14 and 19-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14, 19-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see remarks, filed January 31, 2005, with respect to the rejection(s) of claim(s) 14 under 102 (e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Jones, US 3,858,450.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 14, 19-22, 26, 29, 31-32, and 35-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones.

Jones et al. discloses an apparatus which includes a sampling head adapted to be mounted at a sample pickup station. The head includes a hollow sample pickup probe adapted to be inserted into a sample container at the sample pickup station for extracting a given amount of fluid sample from the container. The pickup probe is movable between a first or sampling position and a second or retracted position by means of an air cylinder. A valve mechanism connected to the probe is operable on movement of the probe to the sampling position for connecting the probe to a device for withdrawing fluid from the sample container through the probe. The air cylinder not only moves the probe but also, and at the same time, operates the valve mechanism. In the

second position the valve mechanism effects fluid connections for mixing a given amount of the fluid sample with another fluid and for simultaneously transferring the mixture to a receptacle (abstract).

When a sample arrives at the sample pickup or aspirating station where one of the sampling heads is located and assuming that the analysis calls for the sample to be mixed with a diluent or a reagent, the probe dips down into the sample, sucks up a quantity of sample, and then withdraws from the cup. During these movements, the diluent or reagent is first drawn into a pump, second, mixed with a specific volume of sample and third, delivered by means of a conduit or tubing to a reaction tube apart from the sampling head. All of this is done **automatically** after which the sampling head is ready for the next cup to come along.

The device comprises a **programming device 14 (controller)** for controlling the automatic operation thereof.

The sampling head 12 includes a **valve mechanism 16 (injector valve mounted on arm 56)** defined by first and second valve blocks 18 and 20 respectively, linearly movable (slidable) relative to each other between two valve positions, namely, a sampling position and a delivery position (loading and injecting positions).

The **probe 22** and the valve mechanism 16 the probe 22 is connected through the valve blocks 18 and 20 and a **sample loop 34** to a **sample pump 36** for withdrawing some of a liquid sample from the cup 24. The pump 36 is operated by a valve 38 connected to the sources 30 and 32 of pressure and vacuum and controlled by the device 14. In this way a given amount of sample is drawn, i.e., aspirated from the

cup 24 and into the sample loop 34. At the same time, a **source 40 of reagent (pressurized source of liquid mobile phase/dilutant)** is connected through the valve blocks 18 and 20 to a reagent pump 42 which is operated by a valve 44 connected to the sources 30 and 32 of pressure and vacuum for filling the pump 42 with a quantity of reagent. The valve 44 is also controlled by the device 14.

When the valve mechanism 16 is in the second or delivery position, one end of the sample loop 34 is connected through the valve blocks 18 and 20 to the reagent pump 42. The other end of the sample loop 34 is then connected to a conduit or tubing 50 leading to a receptacle 52, such as a reaction test tube. A shunt passage hereinafter to be described in detail shunts some of the reagent around the sample loop 34 to the outlet end of the loop 34 where it mixes with the sample being ejected from the sample loop 34 by the pressure of the reagent stream at the inlet end of the loop 34. In this way, the given amount of sample is simultaneously ejected from the sample loop 34, mixed with the reagent and delivered in a reagent-sample mixture to the reaction test tube 52 (analyzer). In the tube 52, the reagent reacts with the liquid sample and after a predetermined period of time the resulting mixture may be subjected to colorimetric measurements. In the case of straight dilution, the resulting mixture may be subjected to counting, etc.

The cylinder 26 (motor) is operated to move the probe out of the cup 24 and to its retracted position and at the same time to move the valve blocks 18 and 20 relative to each other.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 30, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones.

Jones does not specifically recite the length of the connection between the injection valve and the probe or that the injection valve is limited to four or six ports.

However it would have been obvious to one of ordinary skill in the art to recognize that the connection length between the valve and probe may have been any suitable length to ensure the probe adequately extends into the sample containers.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the number of ports may be limited as so desired by the operator. If additional testing is required or no testing at all, one may choose to add

or exclude ports from the valve and employ the device for simply mixing or fluid transfer from one container to another.

7. Claims 23 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones as applied to claim 14 above, and further in view of Nohl et al., US 4,957,009.

Jones does not specifically recite the length of the connection between the injection valve and the probe or that the injection valve is limited to four or six ports. Nor does Jones specify the employment of a liquid chromatography column.

Nohl et al. discloses a pushloop liquid sampling method is an improvement in the method of introducing liquid samples into test equipment (such as for liquid chromatography) via a six port valve. The method involves pulling the sample completely past the sample loop in the six port valve and then pushing the desired amount of sample back into the sample loop (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the six port valve when injecting fluids in a liquid chromatography column as taught by Nohl et al. in order to avoid errors and problems such as the introduction of bubbles within the sample loop.

8. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones as applied to claim 14 above, and further in view of Munk, US 4,942,018.

Munk discloses a system for the generation of solvent composition gradients utilizes a packed bed gradient generator.

Figure 2 discloses an embodiment utilized to used to obtain a first set of experimental gradient profiles. This system was designed to generate a two-solvent gradient, and comprises a first metering pump 22 used to pump a first solvent 24 (solvent A) from a first storage reservoir 26 (reservoir A) and a second metering pump 28 used to pump a second solvent (solvent B) 30 from a second storage reservoir 32 (reservoir B) through packed bed gradient generator 10 into the sample injector 33 chromatographic column 34 and detector 36. Both metering pumps 22 and 28 may be of conventional design and numerous such pumps are readily available on the market. For example, an LDC-Milton Roy Simplex Mini-Pump Metering Pump can be used as metering pump 22 to pump solvent A 24 from reservoir A 26 and an LDC Milton Roy Constomeric III Metering Pump can be utilized to pump solvent B 30 from reservoir B 32. Detector 36 may be any commercially available chromatographic detector such as the Spectromonitor D detector (column 5, lines 20-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Jones to incorporate the analysis column of Munk in order to identify and characterize the resultant mixture in a process in which the components of the mixture may be distinctly identified in a shorten analysis time period (column 1, lines 10-23).

9. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones as applied to claim 14 above, and further in view of Heimberg et al., US 6,656,724.



Jones et al. does not disclose the probe is adjustable my comprising a drive system an X arm extending horizontally in an X direction; a Y arm slidably mounted on the X arm wherein the Y arm extends horizontally in a Y direction; and a Z arm slidably mounted on the Y arm wherein the Z arm extends vertically in a Z direction.

Heimberg et al. discloses a pipette apparatus comprising a pipette arm for pipetting sample substances and/or chemicals.

Figure 1 shows the device comprising a rectangular worksurface 2 having two face edges 2 and a front and rear longitudinal edge 4. Arranged on the worksurface 2 at its rear longitudinal edge 4 is a rear wall 6. Provided at the upper edge portion in the rear wall 6 is a horizontal rail 7 running parallel to the rear longitudinal edge 4 of the worksurface 2. Mounted traveling on the rail 7 in the longitudinal direction thereof (double-arrow 9, X direction) is a robotic arm 8.

The robotic arm 8 is arranged straight and rigid parallel to the face edges 3 of the worksurface 2, it thus standing perpendicular to the plane of the rear wall 6. The robotic arm 8 is outwardly defined by comprising two longitudinal walls 10 and a face wall 11 at its free end, the face wall being arranged U-shaped as viewed from above. Disposed between the two longitudinal walls 10 and spaced away therefrom is a rail 12. Mounted traveling on the rail 12 in the longitudinal direction thereof (Y direction) are three Z arms 13-15. Each of the three Z arms 13-15 extends vertically through a gap 16 between the rail 12 and the longitudinal side walls 10, two of the Z arms 13, 14 being arranged in the gap 16 or the like and the third Z arm 15 being arranged in the gap 16 on the right.

The robotic arm 8 is powered to travel along the rail 7 (X direction) and the Z arms 13 along (Y direction) and perpendicular (Z direction) to the rail 12 so that the Z arms 13-15 can cover substantially the complete area (X direction, Y direction) above the worksurface 2 and are height-adjustable (Z direction).

As to claim 28, as to the location of the valve it would have been obvious that the injection valve maybe located on either arm including the Z arm.

It would have been obvious to one of ordinary skill in art at the time of the invention to modify the device of Jones to incorporate the drive system of Heimberg et al. in order to allow the probe to access various size containers.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Komatsu; Akihiro et al.; Lebl Michael et al.; Hernandez, Raymond; and Kaltenbach; Karl W. et al. disclose probe/injection devices.

Meltzer and Wendell et al. disclose probe devices with drive systems.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

brg

  
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